

# **IMPORTANT INFORMATION ON THE USE OF POTASSIUM IODIDE (KI) TABLETS**

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***WARNING: The use of Potassium Iodide (KI) will not prevent exposure to radiation.***

***The most effective means of preventing or minimizing exposure is immediate evacuation from any area where radiation is present or is anticipated to be present.***

## ***What is Potassium Iodide (KI)?***

KI is a non-prescription drug used to provide a “loading dose” of stable iodine to the thyroid when there is a risk that an individual might be exposed to a potentially harmful quantity of radioactive iodine.

Radioactive iodine or “radioiodines” are by-products of nuclear fission such as that which occurs within a nuclear reactor or as a result of a nuclear weapon explosion. The fission process also produces other dangerous radioisotopes, all of which present an exposure hazard to anyone who remains in close proximity to them once they are released into the environment. KI offers NO protection against isotopes other than radioactive iodine.

When inhaled or ingested in significant quantities, radioactive particles circulate in the bloodstream where they become available to various body systems. Some concentrate in muscle tissue; others in the bones. Radioiodines concentrate in the only body organ that uses iodine, the thyroid gland. The thyroid absorbs and processes iodine to create hormones that control the body’s metabolism.

## ***How does KI work?***

The use of KI is intended to saturate the bloodstream with non-radioactive iodine so that if exposure to radioiodine occurs, the thyroid is less likely to absorb the radioactive material. This lessens the chances that radioiodine is held in the thyroid gland where it can cause tissue damage resulting in the malfunction of the gland and the possible development of cancerous thyroid tumors. KI will NOT reduce or prevent the total body exposure that may occur as a result of being in the presence of radioiodine and other radioisotopes released during a nuclear incident. Low dose exposure may have little effect on the gland while the results of acute or prolonged exposure may not be apparent for years.

## ***When should KI be taken?***

The effectiveness of KI as a “thyroid-blocking” agent depends heavily on when it is consumed. Ideally, it should be taken no more than four hours BEFORE exposure occurs so there is time for the drug to be absorbed into the bloodstream and made available to the thyroid prior to any exposure. While the drug may be taken up to four hours after radioiodine exposure occurs, its effectiveness is diminished once radioiodine is ingested or inhaled.

KI should NOT be taken simply because there is a public notification of a radiological emergency. State and local authorities will advise the public when it is appropriate to consume the drug based on whether a radioiodine hazard exists.

KI should NOT be used as a substitute for evacuation or sheltering in place when state and local authorities recommend those actions. The most effective means of preventing unnecessary exposure is to follow the broadcast recommendations provided by local officials. KI should NOT be used as a substitute for

avoiding consumption of contaminated food, milk and water following a radiological incident.

### ***How much KI should I take?***

The US Food and Drug Administration has issued age-related guidelines on the amount of KI that can be safely consumed. The complete FDA guidance may be found on the Internet at [www.fda.gov/cder/guidance/index.htm](http://www.fda.gov/cder/guidance/index.htm). These guidelines are important to follow, particularly for children and infants whose thyroid glands are more active than adult thyroids and thus more sensitive to iodine levels.

For adults (over 18), the recommended dosage is a single 130-mg tablet every 24 hours.

For those 4-18 years of age, the recommended dosage is 65-mg every 24 hours (one-half of the adult dose). Teenagers of full adult size may take the 130-mg dose.

For children (under 4), the recommended dose is 32-mg every 24 hours (one-quarter of the adult dose).

For infants a month old or younger, the dose should be no more than 16-mg once every 24 hours (one-eighth of the adult dose).

**Do not take more than the recommended dose during a 24-hour period. Consuming additional quantities of the drug will not increase the level of thyroid protection and may cause serious medical complications.**

**The current availability of KI only in 130-mg tablets makes it difficult to accurately divide the tablets into smaller dosages.** Overdosing children and infants may cause thyroid problems affecting growth and development, and parents and guardians are cautioned to carefully monitor and control the use of the drug.

## ***Administering Potassium Iodide (KI) to Infants and Children:***

The US Food and Drug Administration (FDA) has developed detailed instructions on how to prepare the available 130-mg tablets of Potassium Iodide (KI) in the lower dose amounts recommended for infants and young children.

Because the drug has a bitter, salty taste that is generally rejected by children, FDA suggests the 130-mg tablet be crushed and dissolved in a small amount of water which is then added in specific amounts to one of several common drinks such as flavored milk, juice, or soda. The complete FDA guidance is available on the Internet at [www.fda.gov/cder/drugprepare/kiprep.htm](http://www.fda.gov/cder/drugprepare/kiprep.htm).

When a 130-mg tablet of KI is completely dissolved in 8 ounces of liquid, one ounce contains a 16-mg dose of the drug. However, the tablets do not easily dissolve. As an alternative approach, parents or caregivers may cut the pills into approximate dose sizes or crush the tablets and divide the powder into equal amounts. The resulting dose can then be administered in a small amount of juice or other fluid or mixed with applesauce, baby cereal, pudding, or other food.

Once dissolved in liquid, the KI mixture can be refrigerated for up to a week. If unused after a week's time, it should be discarded.

**In instances where KI is given to a newborn, the infant should be monitored by a physician for symptoms of transient hypothyroidism following the administration of the drug.**

## ***KI Is Not Safe For Everyone!***

Those who have a known allergy to iodine, such as those who must avoid certain seafood and other foods with high natural iodine content, should NOT consume KI. Severe allergic reactions could result. Those suffering certain thyroid disorders or taking thyroid medications, as well as pregnant women, nursing mothers, and individuals taking certain heart medications or antipsychotic drugs should consult their physicians before deciding to use KI.

Do NOT substitute other sources of iodine (such as Iodine tablets for water purification or Tincture of Iodine drops) for KI. These products contain a different form of iodine that can be poisonous if misused.

In some instances, those who consume KI, particularly for prolonged periods or in larger than recommended doses, may encounter side effects such as skin rashes, swollen neck glands, stomach upsets, or diarrhea. More serious allergic reactions may produce fever, joint pain, facial swelling or shortness of breath. Should any adverse reaction occur, stop taking the drug and seek immediate medical attention.

**As with any medication, you should consult your physician to determine if KI is safe for you. Keep this and all drugs out of the reach of children.**



The product being provided is IOSAT™ brand potassium iodide tablets produced by Anbex, Incorporated, and manufactured to U. S. P. standards. Each tablets contains 130-milligrams of potassium iodide (abbreviated by its chemical symbol: KI). The tablets are sealed in individual foil packets to protect against moisture and light. The foil packets should be stored at room temperature (between 59 and 86 degrees F) to maintain potency. Although stamped with a five-year expiration date, the tablets are known to retain potency well beyond that date when stored properly.

If you have any questions regarding KI and emergency response plans, contact:

*IDNS*

**Illinois Department of Nuclear Safety**

Division of Planning and Preparedness

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[www.state.il.us/idns](http://www.state.il.us/idns)

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